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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/880,214	06/13/2001	Alan Weir Bucher	PU010124	5312

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Joseph S. Tripoli  
THOMSON multimedia Licensing Inc.  
Patent Operations  
Two Independence Way, Post Offices Box 5312  
Princeton, NJ 08540-5312

[REDACTED] EXAMINER

PHINNEY, JASON R

[REDACTED] ART UNIT [REDACTED] PAPER NUMBER

2879

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Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	09/880,214	BUCHER, ALAN WEIR
	Examiner Jason Phinney	Art Unit 2879

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 13 June 2001.  
 2a) This action is FINAL.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-10 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) 1-7, 9 and 10 is/are allowed.  
 6) Claim(s) 8 is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on 13 June 2001 is/are: a) accepted or b) objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 11) The proposed drawing correction filed on \_\_\_\_\_ is: a) approved b) disapproved by the Examiner.  
     If approved, corrected drawings are required in reply to this Office action.  
 12) The oath or declaration is objected to by the Examiner.

#### Priority under 35 U.S.C. §§ 119 and 120

13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All b) Some \* c) None of:  
     1. Certified copies of the priority documents have been received.  
     2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
     3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
     \* See the attached detailed Office action for a list of the certified copies not received.  
 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
     a) The translation of the foreign language provisional application has been received.  
 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

#### Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____	6) <input type="checkbox"/> Other: _____

## **DETAILED ACTION**

### ***Examiner's Notes***

1. The Examiner notes that on Page 3 of the specification the Applicant describes Figures 7 and 8 as well as 10 and 11 concurrently. The Examiner believes that the description of the figures would be more clear should each figure be described separately in order to better explain the position in the thermal cycle represented by each figure.
  
2. The Abstract is objected to because of the following minor informalities: on Page 10, Line 9, "aperatures" should be changed to "apertures."Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
4. Claim 8 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 8 recites the limitation "the apertures of the support structure" on Page 8, Line 30. There is insufficient antecedent basis for this limitation in the claim. It is uncertain whether the Applicant is referring to the apertures of the insert member or is attempting to further claim that the support blade structure should contain apertures.

***Allowable Subject Matter***

5. Claims 1-7 and 9-10 are allowed.
6. The following is a statement of reasons for the indication of allowable subject matter:

The prior art made of record fails to show or suggest a mask frame assembly as claimed in Claim 1, comprising a support blade structure formed of a material with a first coefficient of thermal expansion, an insert member formed of a material with a second coefficient of thermal expansion, wherein the insert member has a plurality of apertures positioned along its length. Nor does that prior art exemplify that the frame should further comprise at least one fastening portion connecting the insert member to the support blade structure at a generally central location of the insert member as well as fastening portions connecting the insert member to the support structure through the apertures whereby the opening of the apertures are dimensioned to have a respective clearance for loosely receiving a respective fastening portion.

The prior art does teach various ways of dealing with the thermal expansion of the mask structures including U.S. Patent No. 5,416,337 to Kim, which teaches the use of slots and fastening means to maintain alignment as the mask expands and contracts (see Figure 1). An alternate method of controlling thermal expansion is by choosing materials that have specific thermal expansion coefficients as taught, for example, by U.S. Patent No. 5,030,154 to Palac. Neither Kim nor Palac exemplify, however, that the frame should be comprised of a support blade and an insert having two thermal expansion coefficients and joined by fasteners through apertures in the insert with the center aperture fitting snugly around the fastener while the more distal apertures sized to loosely receive the fasteners. A frame made according to the instant invention would allow the two portions to expand at different rates while maintaining the

appropriate alignment of the mask, this allows for the mask frame to be built using a lesser quantity of the more expensive metals having low thermal expansion coefficients.

7. Claims 2-7 are further limitations upon the allowed base claim and are therefore also allowable.

8. The prior art made of record also fails to show or suggest a support blade structure for a tension mask frame assembly as claimed in Claim 9, comprising an insert member connected to a support blade structure at a generally central location of the insert member, the insert member further comprising a plurality of apertures extending from the central location along its length and fastening portions extending through at least one of the apertures to connect the insert member to the support blade structure wherein the apertures are dimensioned to be larger than the fastening portions to permit movement of the support structure relative to the insert member along the length of the insert member. A support blade structure made according to the instant invention would allow the two portions to expand at different rates while maintaining the appropriate alignment of the mask, this allows for the mask frame to be built using a lesser quantity of the more expensive metals having low thermal expansion coefficients.

9. Claim 10 is a further limitation upon the allowed base claim and are therefore also allowable.

10. Claim 8 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason Phinney whose telephone number is (703) 305-3999. The examiner can normally be reached on M-F 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh Patel can be reached on (703) 305-4794. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7382 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

JP  
January 16, 2003

  
ASHOK PATEL  
PRIMARY EXAMINER